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--The present invention makes it possible to provide the gas supply path structure (and the gas supply method) capable of suppressing the occurrence of the shock wave while forming the high-speed flow close to the speed of sound in the simple structure. Particularly, when this gas supply path structure is applied to the excimer laser oscillating apparatus, the apparatus can be replenished with the excimer laser gas, which is apt to be exhausted, without concern about the occurrence of the shock wave, and the apparatus can maintain the stable light emission over a long time.--

IN THE CLAIMS:

Kindly cancel claims 43 and 44 without prejudice or disclaimer of subject matter.

Please amend claims 41 and 42 and add new claims 45-48 as follows. A marked up version showing the changes made thereto is attached.

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sub C1 > -41. (Amended) An exposure apparatus comprising:
(i) a laser oscillating apparatus, said laser oscillating apparatus generating illumination light,
said laser oscillating apparatus including gas supply path structure having a convergent-divergent nozzle, said gas supply path structure having a fluid inlet into which a laser gas is made to flow, a throat portion for controlling a flow speed of said laser gas to less than a speed of sound and a fluid outlet of which said laser gas from said throat portion is made to flow out and a waveguide unit for guiding microwaves into said gas supply structure,

(ii) a first optical system for radiating said illumination light from said laser oscillating apparatus onto a reticle in which a predetermined pattern is formed; and

(iii) a second optical system for radiating said illumination light having passed through said reticle, onto a surface to be irradiated.

42. (Amended) An exposure apparatus comprising:

(i) a laser oscillating apparatus, said laser oscillating apparatus generating illumination light,

said laser oscillating apparatus including a gas supply path structure group which has a plurality of convergent-divergent nozzles, each nozzle comprising a fluid inlet into which a laser gas is made to flow, a throat portion for controlling a flow speed of said laser gas, and a fluid outlet of which said laser gas from said throat portion is made to flow out, and

a waveguide unit for guiding microwaves into said gas supply path structure group, wherein said gas supply structure group includes a light-emitting portion for generating a laser beam, and the flow speed of said laser gas at said light-emitting portion is higher than a speed of sound,

(ii) a first optical system for radiating said illumination light from said laser oscillating apparatus onto a reticle in which a predetermined pattern is formed; and

(iii) a second optical system for radiating said illumination light having passed through said reticle, onto a surface to be irradiated.



45. (New) A method for producing a device comprising:

- (a) coating a surface to be irradiated with a photosensitive material;
- (b) exposing a predetermined pattern in said photosensitive material

employing exposure apparatus; and

(c) developing said photosensitive material on said surface after said exposing step (b) wherein said exposure apparatus includes

(i) a laser oscillating apparatus generating illumination light, said laser oscillating apparatus including a gas supply path structure having a convergent-divergent nozzle, said structure a fluid inlet into which a laser gas is made to flow, a throat portion for controlling a flow speed of said laser gas less than a speed of sound, and a fluid outlet of which said laser gas from said throat portion is made to flow out, and a waveguide unit for guiding microwaves into said gas supply path structure;

(ii) a first optical system for radiating said illumination light from said laser oscillating apparatus onto a reticle in which a predetermined pattern is formed; and

(iii) a second optical system for radiating said illumination light having passed through said reticle, onto the surface to be irradiated.

46. (New) The method according to claim 45, wherein said surface to be irradiated is a wafer surface and a step of forming a semiconductor element on said wafer surface.

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47. (New) A method for producing a device comprising:

- (a) coating a surface to be irradiated with a photosensitive material;
- (b) exposing a predetermined pattern in said photosensitive material

employing an exposure apparatus; and

(c) developing said photosensitive material on said surface after said exposing step (b), wherein said exposure apparatus includes

(i) a laser oscillating apparatus generating illumination light, said laser oscillating apparatus including a gas supply structure group which has a plurality of connected convergent-divergent nozzles, each said nozzle comprising a fluid inlet into which a laser gas is made to flow, a throat portion for controlling a flow speed of said laser gas, and a fluid outlet of which said laser gas from said throat portion is made to flow out; and a waveguide unit for guiding microwaves into said gas supply path structure group, wherein said gas supply structure group includes a light emitting portion for generating a laser beam, and the flow speed of said laser gas at said light emitting portion is higher than a speed of sound,

(ii) a first optical system for radiating said illumination light from said laser oscillating apparatus onto a reticle in which a predetermined pattern is formed; and

(iii) a second optical system for radiating said illumination light having passed through said reticle, onto the surface to be irradiated.